United States Department of the Interior
Bureau of Land Management

Finding of No Significant Impact
Environmental Assessment
DOI-BLM-NM-F020-2010-0011-EA

---

29 July 2010

Ojo Sarco Aquatic, Wetland and Riparian Habitat Stabilization & Enhancement

Location: Cañada de Ojo Sarco, Cañoncito, NM

U.S. Department of the Interior
Bureau of Land Management
Taos Field Office
226 Cruz Alta Road
Taos, New Mexico 87571
575-758-8851

FINDING OF NO SIGNIFICANT IMPACT

ENVIRONMENTAL ASSESSMENT

DOI-BLM-NM-F020-2010-0011-EA

Ojo Sarco Aquatic, Wetland and Riparian Habitat Stabilization and Enhancement

This unsigned FONSI and the attached EA #DOI-BLM-NM-F020-2010-0011-EA for the Ojo Sarco Aquatic, Wetland and Riparian Habitat Stabilization and Enhancement are available for public review and comment for 30 days beginning on 2 August 2010.

Based on the analysis of potential environmental impacts in the attached EA and consideration of the significance criteria in 40 CFR 1508.27, it has been determined that with applicable mitigating measures, the Proposed Action (Alternative A) would not result in significant impacts on the human environment. An environmental impact statement (EIS) is not required.

The decision to approve or deny the above alternatives and if appropriate a signed FONSI with rationale, will be released after consideration of public comments and completion of the EA.

Ojo Sarco Aquatic, Wetland and Riparian Stabilization and Enhancement Project

DOI-BLM-NM-F020-2010-0011-EA

Chapter 1: Purpose and Need

1.1 Introduction

The BLM Taos Field Office (TAFO) proposes to improve the stability of the Cañada de Ojo Sarco, a small tributary of the Rio Embudo between the communities of Upper Cañoncito and Ojo Sarco in Rio Arriba County, NM. TAFO conducted fish habitat and population studies that indicate impairment of stream and floodplain function. The TAFO contracted a hydrologic consulting firm to design structures that will increase aquatic habitat – primarily pools – and reduce stream incision, which was apparent in runoff events occurring over the past 5 years. It is anticipated that implementation would begin in 2010 and would be completed in phases over the course of ten years depending on funding and outcome of individual phases.

This Environmental Assessment is tiered from the *Final Environmental Impact Statement for Riparian and Aquatic Habitat Management in the Taos Field Office – New Mexico, Volumes 1 and 2*. That document was part of a settlement for a lawsuit brought against the BLM.

1.2 Purpose and Need for Action

The need for action has been documented in fish population (3-pass depletion) and habitat surveys (USFS R3 protocol) that the TAFO has conducted on the Cañada de Ojo Sarco to assess stream condition. Results indicated that no fish species were present and that aquatic habitat is currently insufficient to support obligate aquatic biota. The habitat survey showed a lack of pools – deeper, slow moving water - necessary for most fish species during some part of their life cycle. Much of the stream lacked sufficient wetland/riparian vegetation to protect banks from flood flows or allow for creation of pools through root scouring or vegetation dams. During collection of habitat data, BLM staff also witnessed severe erosion of stream banks during a large precipitation event, resulting in a 3 foot incision of the channel at the upstream end of public lands and increased stream turbidity.

The purpose of the proposed project is to improve riparian health, improve aquatic habitat quality, and reduce instability in the system by constructing a stable stream channel that will allow for the development of a functioning riparian zone and result in creation of instream habitat that can be used by fish and other aquatic biota.

1.3 Land Use Plan Conformance

This project is in conformance with the Taos Resource Management Plan (1988) as amended by the *Final Environmental Impact Statement for Riparian and Aquatic Habitat Management in the Taos Field Office – New Mexico, Volumes 1 and 2* (2000), which identified the specific actions (develop structures, control erosion and manage for native vegetation) in the proposed project to be applied to riparian or aquatic areas where monitoring indicated the need. The project is also tied to the Clean Water Act (1977) which requires federal agencies to reduce water quality impairments through management actions.

1.4 Identification of Issues

The TAFO staff has been notified via internal scoping of the proposed project. Issues that have been identified include potential impacts to migratory bird habitat, water quality impairments during construction and ability of structures to withstand high flows.

The TAFO held 2 scoping meetings in the community of Dixon concerning projects identified for the Cañada de Ojo Sarco. The first meeting in 10 April 2006, the public was asked generally about their opinion of protecting and rehabilitating the drainage. Another meeting specific to this project was held on 24 September 2009 and outlined the plans as developed by the BLM consultant.

From these scoping efforts the following issues have been identified:

1.4.1 Fisheries

- Changes to the Cañada de Ojo Sarco channel should improve fisheries by increasing pool habitat.

1.4.2 Floodplains

- Project implementation would alter the active channel such that disjunct floodplains would be reconnected, providing for riparian area development and attenuation of flood flows.

1.4.3 Migratory Birds

- Migratory birds could be disturbed where implementation occurs during the breeding bird season, however long-term benefits to migratory birds could result from increasing nesting habitat and foraging opportunities.

1.4.4 Water Resources

- Project implementation could result in water quality impairments due to suspension of sediment.
- Project success would improve water quality in the project reach and downstream by reducing sediment loads into the Rio Embudo and decreasing temperature after development of a stable wetland/riparian zone.

1.4.5 Vegetation/Riparian Zone

- Improvement of the riparian zone may result from stabilized streambanks and increased native riparian vegetation.

1.4.6 Soils

- Ground disturbing activities during project implementation may result in soil erosion within the Cañada de Ojo Sarco channel.
- Project success would result in floodplain and channel soil stability and reduced erosion.

1.4.7 Special Designations

- Project implementation could alter resource values for an Area of Critical Environmental Concern and eligible Wild and Scenic River segment.

1.5 Resources and Uses Not Affected

It has been determined that there would be no impacts to Threatened and/or Endangered Species based on negative results from protocol surveys in 2009 for Southwestern willow flycatcher (*Empidonax traillii*

extimus) and lack of habitat for the species. There are no other listed species or species proposed for listing or critical habitat identified for the project reach. In addition, based on scoping comments, this project is not expected to impact or affect Air Quality, Cultural Resources, Environmental Justice, Forestry and Fire, Invasive/Non-native Species, Native American Religious Concerns, Rangelands, Regulated Wastes, Recreation, or Visual Resources.

Chapter 2: Description of Alternatives

2.1 Alternative A: Proposed Action

The proposed action is to implement engineering controls combined with native plant revegetation of the riparian zone of BLM managed segments of the Cañada de Ojo Sarco floodplain between Upper Cañoncito and Ojo Sarco in Rio Arriba County, NM. Engineering controls would include structures and earthworks that keep the channel from incising below its current elevation, and regrading of the channel to increase sinuosity through the floodplain. Structures to be built include earthen berms, small rock check dams, weirs and gabion baskets (Appendix A). Structures would be constructed either by hand crews or using heavy machinery within the river where necessary. Changes in channel alignment would be completed using both structure placement and heavy equipment to create a new channel. Structures placement and changes in channel alignment are shown in Appendix A. All project areas would be replanted or reseeded with native vegetation to assist with recovery and stabilization, as well was to increase habitat and suppress weeds. All vehicles entering the site will be pressure washed prior to entry with inspection required. Weed species found in the project area will be removed as per the Taos BLM programmatic plan, currently under preparation. If that plan remains incomplete and this project is ready, weeds would be removed in the project areas mechanically.

Vegetation around work areas could be removed prior to implementation or removed/disturbed during implementation. If implementation is scheduled during the breeding bird season (mid-March through mid-September), a qualified wildlife biologist would conduct a nest search in the project area where activity is to occur (up to a minimum of 200 feet on either side of the stream). If an active nest is located, the nest site (ground, tree or shrub) would be left undisturbed, including a 100 foot circular buffer zone around the nest, until the end of the current breeding bird season.

The TAFO would implement the project internally or contract with a construction company. The project would start when funds becomes available (fiscal year 2010 or 11) and would be completed in phases over numerous years. Current design identifies 8 distinct reaches within the project area. Each reach may be considered for one phase of implementation, or multiple reaches could be rehabilitated together in a single phase. Structure design does not require permanent placement, but are conceived as short term (around 10 years) controls to allow natural processes to stabilize the channel. Structures would only be maintained to the extent needed to prevent the channel from reverting to an unstable form, identified by deep incision and lack of riparian vegetation such as willow and cottonwood. Structures would be developed from natural materials, such as rock or soil, so that removal of these structures is not necessary.

This project would follow the guidance of the *Final Environmental Impact Statement for Riparian and Aquatic Habitat Management in the Taos Field Office – New Mexico, Volumes 1 and 2* (2000), which allows for the use of adaptive management. The adaptive management process would entail completion of a phase of rehabilitation followed by assessment of success of the activities through at least one season of

high flows. The work would be assessed to determine if the structures withstood seasonal high flows and if the design was allowing the reestablishment of channel stability. Assessments would outline changes to be incorporated for the next phase. Changes outside the scope of this document would need to be reanalyzed in another NEPA document.

As phases are completed and fish habitat conditions improve, the TAFO would work with the New Mexico Department of Game and Fish (NMDGF) to move fish from adjacent tributaries or stock hatchery reared fish. Only native species known to occur in the area would be considered for stocking, though connection with the Rio Embudo may allow colonization of non-native fish species. The TAFO, in cooperation with NMDGF, would actively remove exotic fish species from the Cañada de Ojo Sarco.

The TAFO has completed many surveys that will allow monitoring of success. It is anticipated that the following protocols will be used to judge outcome for each phase of the project.

Desired outcome	Monitoring method	Protocol Schedule
Increase riparian canopy	Densiometer readings	Before and After implementation
Increase pool size and number	Fish Habitat Protocol	Before and After implementation
Attain Proper Functioning Condition	PFC assessment	Before and After implementation

2.2 Alternative B: No Action

Under this alternative, the Cañada de Ojo Sarco would be managed as it currently is, which includes restrictions on vehicle access and grazing use. All riparian and aquatic areas with the TAFO are given special protection under the existing riparian management plan. Under the plan, the TAFO can plant vegetation, remove invasive non-native plants and install some structures to prevent stream bank and bed erosion.

The difference between this alternative and Alternative A is the extent of disturbance allowed. Alternative A includes elements that were not analyzed in the riparian management plan and requires more instream disturbance.

Chapter 3: Affected Environment

The Cañada de Ojo Sarco is a small perennial stream located between Canoñcito and La Cuestecita, NM (Map1). The proposed project would be implemented in T22N, R10E S1 and T22N R11E S6. The perennial nature of the flow is provided via a cross-basin diversion from the Rio Trampas developed in the early 19th century. In addition to flows from the diversion, the drainage experiences episodes of floodstage runoff caused by heavy rainfall, fast melting snowpack or a combination of rain and snowmelt. The Ojo Sarco is a tributary of the Rio Embudo, though the reach of the Ojo Sarco just upstream from the Embudo confluence may lack sufficient habitat to allow upstream migration of fish.

3.1 Fisheries

The TAFO completed fish and fish habitat surveys in the Cañada de Ojo Sarco in 2005 and 2006 respectively (data available at the TAFO). The habitat survey identified a lack of pool habitat – areas of slow deep water – necessary for fish species that are known to occur in this area. Most of the Cañada de Ojo Sarco would be classified as riffle or run – shallow fast water. Subsequent fish surveys using backpack electrofishers found an absence of fish, a finding that was in line with the poor habitat quality.

Also noted during these surveys were incision events, large flows that scoured the channel up to 3 feet below the previous elevation. These incision events result in the development of disjunct floodplains that lack riparian vegetation likely resulting in high water temperatures during summer months.

3.2 Floodplains

The project area is located entirely with the Cañada de Ojo Sarco floodplain, which consists of both active and relict floodplains. Active floodplains are generally narrow due to incision events, though geologic controls (exposed bedrock) have allowed for the development of small areas of riparian forest with broader floodplain areas. Relict floodplains, floodplains that are outside of the 1:100 frequency flood, occur throughout the project area and either lack vegetation or are vegetated by plants associated with upland communities, indicating a lack of hydrologic connection to the stream.

3.3 Migratory Birds

Based on breeding bird surveys (Templeton 2007), over 60 different species occur in the area, 20 of which are considered of special management concern by either the state of New Mexico or the U.S. Fish and Wildlife Service (USFWS) (See Appendix B)

3.4 Water Resources

Return flows from acequia irrigation appear to be the primary source of perennial flow within the Ojo Sarco, though there is a spring that flows into a tributary arroyo (Cañada del Oso) at the upstream end of the project reach. Pulse flows occur during periods of high runoff, resulting in channel erosion and incision. There are numerous irrigation diversion structures on the Rio Embudo downstream from the project area with historic water rights. No water rights have been identified for the project reach and there are currently no diversion structures.

The New Mexico Environment Department has not included the Cañada de Ojo Sarco in its assessment for impaired waters. Based on the stream indicators, water quality is likely impacted by sediment and temperature. Nutrients from agricultural use may also be an issue, but BLM staff have not noticed algal blooms normally associated with high nutrient waters.

3.5 Vegetation/Riparian Zone

The riparian zone has been described as unstable (Riverbed Engineering 2008) and was rated as non-functional in 1994 by the BLM. Riparian vegetation is primarily limited to the margins of the low flow channel and includes a mix of narrowleaf cottonwood (*Populus angustifolia*) and Rio Grande cottonwood (*Populus deltoides* ssp. *wislizeni*) dominating the overstory, with bluestem willow (*Salix irrorata*) and thinleaf alder (*Alnus incana* ssp. *tenuifolia*) in the shrub understory, along with a mix of grass and forbs in the floodplain and pockets of emergent wetland vegetation where groundwater levels are high. A steady supply of base flow water from irrigation in the upper valley has helped establish a strong riparian community in discrete locations (Riverbed Engineering 2008).

3.6 Soils

The following soil characteristics of the project area are taken from the The Soil Survey of Rio Arriba County Area, New Mexico (NRCS 2008) as presented at the NRCS Web Soil Survey

site(http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx, 2010). The main project area consists of Yarts Sandy Loam, 1-4% slope. This soil is comprised of both sandy loam in the top few inches and fine sandy loam to depth. In many areas of the Cañada Ojo Sarco, the upper few inches has been removed due to erosion that has occurred in the past. The adjacent soils include Florita-Rock outcrop complex, 15-45% slopes on the south side of the project area; Dermala-Chimayo complex, 20-50% slopes and Dermala-Rosced complex, 20-50% slopes to the north of the project area. The NRCS survey rates the Yarts sandy loam as being somewhat limited (moderately favorable) to development of embankments, dikes and levees and very limited to development of pond areas due to seepage through the soil. Yarts is classified as very limited for freshwater wetland plants; riparian herbaceous plants; and riparian shrubs, vines and trees because the soil is too dry. However, this drainage currently has apparent perennial flows, so dryness is not considered a limitation.

3.7 Special Designations

3.7.1 Areas of Critical Environmental Concern

The project area is within the Copper Hill Area of Critical Environmental Concern's (ACEC) Rio Embudo Protection Zone. The designation acknowledges this area's outstanding scenic and wildlife values. Management controls for the Zone include restrictions on visual change allowed, withdrawal from mineral entry, and requirements to manage the watershed to enhance wildlife habitat, ecosystem health and scenic values.

3.7.2 Wild and Scenic Rivers

The project area is also within a 2.4 mile corridor of the Cañada de Ojo Sarco found eligible for designation as a Wild and Scenic River. The Outstandingly Remarkable Value which led to this determination was the area's unique geologic features. The river was tentatively classified as "Scenic" until a suitability study is completed with the Forest Service. Until this suitability study is completed, BLM will manage the corridor to protect its free-flowing character and maintain its unique geologic features.

Chapter 4: Environmental Effects

4.1 Direct and Indirect Effects

4.1.1 Alternative A: Proposed Action

4.1.1.1 Fisheries

The proposed action is expected to create useable habitat for fish species that occur in the Rio Embudo, especially small bodied species and juvenile fish of larger species such as brown trout (*Salmo trutta*). Therefore, under this alternative, it is expected that there would be a direct effect to habitat resulting in an increase in fish in the Cañada de Ojo Sarco.

If this project increases fish numbers in the Ojo Sarco, then there may be an indirect impact to the fish community in the Rio Embudo. The Embudo may experience an increase in small bodied fish species density resulting from the ability of those species to seek refuge from large predatory fish. However, juvenile predatory species would also be able to access the Ojo Sarco, possibly limiting the indirect effect.

4.1.1.2 Floodplains

This alternative would result in an increase in active floodplain area by recontouring the channel and developing control structures so that the channel reconnects to relict floodplains. In addition, the project would stabilize floodplains on the Cañada de Ojo Sarco by controlling and attenuating flood pulses.

4.1.1.3 Migratory Birds

Based on current guidance from the USFWS, occupied migratory bird nests cannot be removed or destroyed without a federal permit issued by the USFWS, however, unoccupied nests can be removed or destroyed without a federal permit. Therefore, the optimum time for removal of trees, shrubs or migratory bird nesting habitat is from late September through mid-February. If the project is conducted outside the primary breeding season, impacts to migratory birds would be avoided.

If the project is implemented during the nesting season (mid-March through mid-September), surveys for nesting birds, conducted by a qualified wildlife biologist, would identify any active nests and the area would be avoided until the current breeding bird season is completed. If construction is implemented during the primary breeding season, there is the potential to impact reproductive and/or foraging activities of migratory birds adjacent to the site, resulting in a negative effect on individual birds, eggs, or young due to disturbance from human noise and commotion. This would not have a measurable negative effect at the population or species level due to the amount of similar habitat in the area. Once construction is completed there should be little to no impacts to individual migratory birds, eggs, and/or young in the area.

In the long-term, riparian restoration, including the addition of native plants and trees and stabilization of the streambank to decrease erosion and improve water quality, could improve habitat conditions and potentially increase biodiversity, foraging opportunities and nesting success for migratory birds.

4.1.1.4 Water Resources

Water Quality: This alternative would have direct short term impacts to water quality. In channel construction would mobilize sediment and create turbidity downstream. However, the project would employ best management practices to reduce the impact. These impacts would not exceed current erosion losses caused by flood pulses. Long term water quality (post implementation) would be improved as a result of stabilized channel and floodplains, which would reduce the amount soil eroding form banks in the Ojo Sarco.

Water Quantity: This alternative is expected to increase the water quantity stored in the floodplain of the Cañada de Ojo Sarco. Stabilization of the channel and floodplain and the resulting expansion of the riparian area would allow for aggradation in the drainage, that would ultimate increase water storage capacity in floodplain soils.

4.1.1.5 Vegetation/Riparian Zone

Approximately 9 acres of riparian zone could be affected by the Proposed Action, however, not all vegetation would be disturbed and, in many cases, improvements to the stream channel would increase vegetative cover within the project area, including revegetation with native plant materials.

4.1.1.6 Soils

This alternative would result in decrease soil loss in the Ojo Sarco valley as channel and floodplains are stabilized by structures and growth of a riparian zone.

4.1.1.7 Special Designations

4.1.1.7.1 Areas of Critical Environmental Concern

The proposed action would enhance the riparian vegetation along the Canada de Ojo Sarco, with minimal or no affect on the Rio Embudo Protection Zone's scenic quality. The structures that would be built to stabilize the stream channel will decrease erosion, improve the function of the riparian zone, and provide for improved habitat for fish and other aquatic wildlife.

4.1.1.7.2 Wild and Scenic Rivers

BLM Manual 8351 provides policy and program direction for Wild and Scenic Rivers. "Once a river segment has been determined eligible, BLM's policy shall be to protect and, where possible, enhance any identified outstandingly remarkable river values pending a subsequent suitability determination and/or designation decision by Congress", (BLM 1992). The proposed action would enhance the outstandingly remarkable values identified, meet the general management objectives for Scenic River Areas, and would not adversely affect the tentative Scenic classification of the Ojo Sarco. Although work would be conducted and small structures built in the channel, this would not affect the free flowing nature of the river. The outcome will be to enhance the outstandingly remarkable values by increasing sinuosity and riparian vegetation, decreasing erosion, improving wildlife habitat and returning the river to its natural functioning condition.

4.1.2 Alternative B: No Action

4.1.2.1 Fisheries

This alternative would not allow for development of fish habitat in the Cañada de Ojo Sarco and therefore, the drainage would continue to be devoid of a fish community.

4.1.2.2 Floodplains

Under this alternative, it is expected that continued loss of active floodplain area would occur as a result of channel incision and loss of the channel-floodplain connection.

4.1.2.3 Migratory Birds

Since there would be no activities occurring in riparian habitat that harbors many species of migratory birds, there would be no direct short term impact to migratory birds if the alternative is selected. There would be an indirect long term impact as a result of continued loss of floodplain and riparian area due to the unstable channel.

4.1.2.4 Water Resources

Water Quality: Under this alternative, water quality impairments (turbidity and sedimentation) caused by channel and bank erosion would continue until the floodplain soils eroded to bedrock. These impairments also impact the Rio Embudo.

Water Quantity: This alternative would result in no control of incision in the Cañada de Ojo Sarco. Continued incision will reduce the amount of storage area for waters in the Cañada de Ojo Sarco floodplain.

4.1.2.5 Vegetation/Riparian Zone

No vegetation would be directly affected by this alternative. This alternative would not allow for expansion of the riparian zone.

4.1.2.6 Soils

Under the No Action Alternative, increase soil loss from the channel as a result of flood flows would continue to occur.

4.1.2.7 Special Designations

4.1.2.7.1 Areas of Critical Environmental Concern

The No Action Alternative would not affect the Rio Embudo Protection Zone's scenic quality. Riparian plantings allowed under current riparian management might control erosion and enhance scenic quality.

4.1.2.7.2 Wild and Scenic Rivers

The No Action Alternative would not affect the outstandingly remarkable values identified, the general management objectives for Scenic River Areas, or the tentative Scenic classification for the Ojo Sarco.

4.2 Cumulative Effects Analysis

A cumulative impact, as defined in 40 CFR 1508.7, is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other action.

4.2.1 Cumulative Actions

4.2.1.1 Past and Present Actions

Specific actions that have occurred in this area include development and maintenance of a dirt road and livestock grazing.

4.2.1.2 Reasonably Foreseeable Actions

It is expected that human population will continue to increase in the area around the Ojo Sarco, resulting in new development upstream from the project site.

Changes in climate as a result of increased air temperatures from human produced green house gas emissions have been occurring and will continue for some time into the future. Factors such as cloud cover and actions to reduce the causes or effects of climate change may result in smaller increases in temperature and less impact to climate.

4.2.2 Cumulative Effects

4.2.2.1 Fisheries

Predicted changes in air temperature can result in increased water temperature. Since fish species are sensitive to water temperature, there may be a cumulative impact to community composition. However, implementation of Alternative A would reduce the impact of increased temperature by shading water in the Ojo Sarco. Therefore, the overall cumulative effect to fisheries over a 10 to 20 year period is likely to be neutral.

4.2.2.2 Floodplains

There are not expected to be any cumulative impacts to floodplains.

4.2.2.3 Migratory Birds

Loss of habitat from climate change would result in loss of migratory bird numbers. Also, migration routes are likely to be altered as increased temperatures result in shifting vegetation patterns across North America. Implementation of Alternative A would mitigate the impacts of climate change for the Cañada de Ojo Sarco, while no action to stabilize habitat would allow habitat to decline in size and vigor.

4.2.2.4 Water Resources

Impairments to water quality caused by septic infiltration could occur as a result of increased housing in the area upstream from the project site. Implementation of Alternative A would mitigate increased nutrient discharge from septic by increasing riparian vegetation that would use nutrients from these waters. Taking no action would allow result in general cumulative decline in water quality.

Water quantity will be cumulatively impacted as a result of increased population and increased evapotranspiration caused by higher average annual temperatures. Although the storage of water should increase at the project site if Alternative A is implemented, there is no mitigation to account for declines in water flowing to the site.

4.2.2.5 Vegetation/Riparian Zone

Expansion of the riparian zone under Alternative A may mitigate the cumulative impact from climate change for 10 to 20 years. Taking no action may result in loss of the riparian zone as soils erode and water storage is insufficient to maintain hydrophytes.

4.2.2.6 Soils

Cumulative impacts to soils are greatest under the No Action alternative. Increased evapotranspiration caused by increased air temperatures would result in loss of vegetation and greater exposure to erosion.

Alternative A would mitigate these impacts for a period of time by increasing the water storage capacity in the floodplain soils, thereby maintaining riparian vegetation that protects soils.

4.2.2.7 Special Designations

4.2.2.7.1 Areas of Critical Environmental Concern

Changes to the county road adjacent to the Cañada de Ojo Sarco drainage may occur as a result of increased traffic. Changes such as paving or widening may affect the Rio Embudo Protection Zone's scenic quality, though the BLM can work with Rio Arriba County to mitigate those impacts. The proposed action is expected to protect ACEC values under climate change scenarios predicting changes in precipitation and temperature.

4.2.2.7.2 Wild and Scenic Rivers

Cumulative impacts are not expected to impact WSR eligibility for either alternative.

Chapter 5: Consultation and Coordination

5.1 Summary of Consultation and Coordination

RiverBend Engineering, LLC
New Mexico Department of Game and Fish, Northeast Area Office

5.2 Summary of Public Participation

10 April 2006 – Dixon, NM – protection of Cañada de Ojo Sarco presented at public meeting.
24 September 2009 – Dixon, NM – public meeting for comments on proposed design.
Summer 2010 – EA will be open to public review

5.2.1 Public Comments Analysis

Analysis will occur after public review period.

5.3 List of Preparers

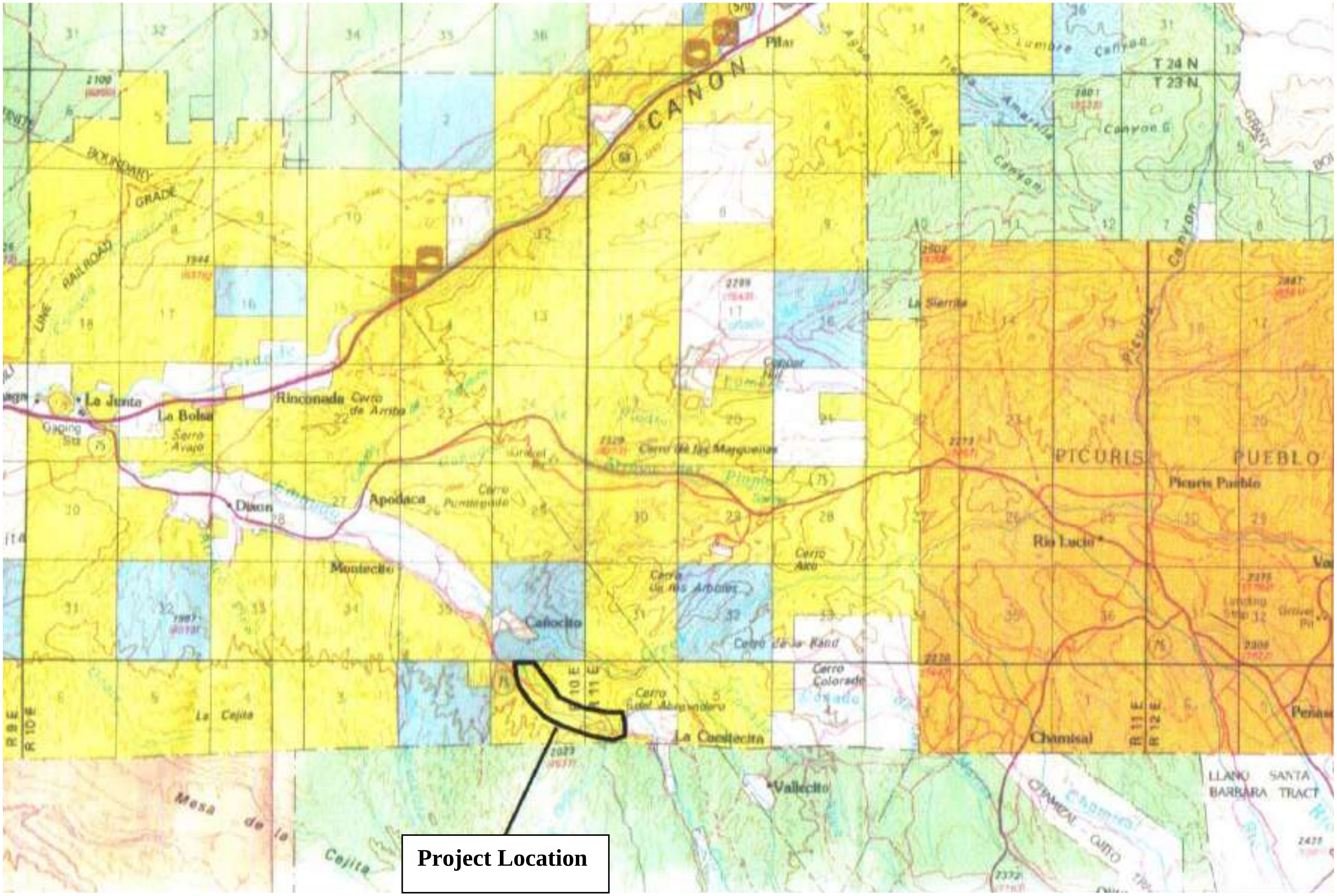
Valerie Williams, Wildlife Biologist, Taos Field Office
Brad Higdon, Planning and Environmental Coordinator, Taos Field Office
Tami Torres, Outdoor Recreation Planner, Taos Field Office
Paul Williams, Archaeologist, Taos Field Office
Jacob Young, Range Conservationist, Taos Field Office
Herbert Chavez, Engineer, Taos Field Office

Chapter 6: References

Natural Resource Conservation Service, 2008. *Soil Survey of Rio Arriba Area, New Mexico, Parts of Rio Arriba and Sandoval Counties*. Available at http://soildatamart.nrcs.usda.gov

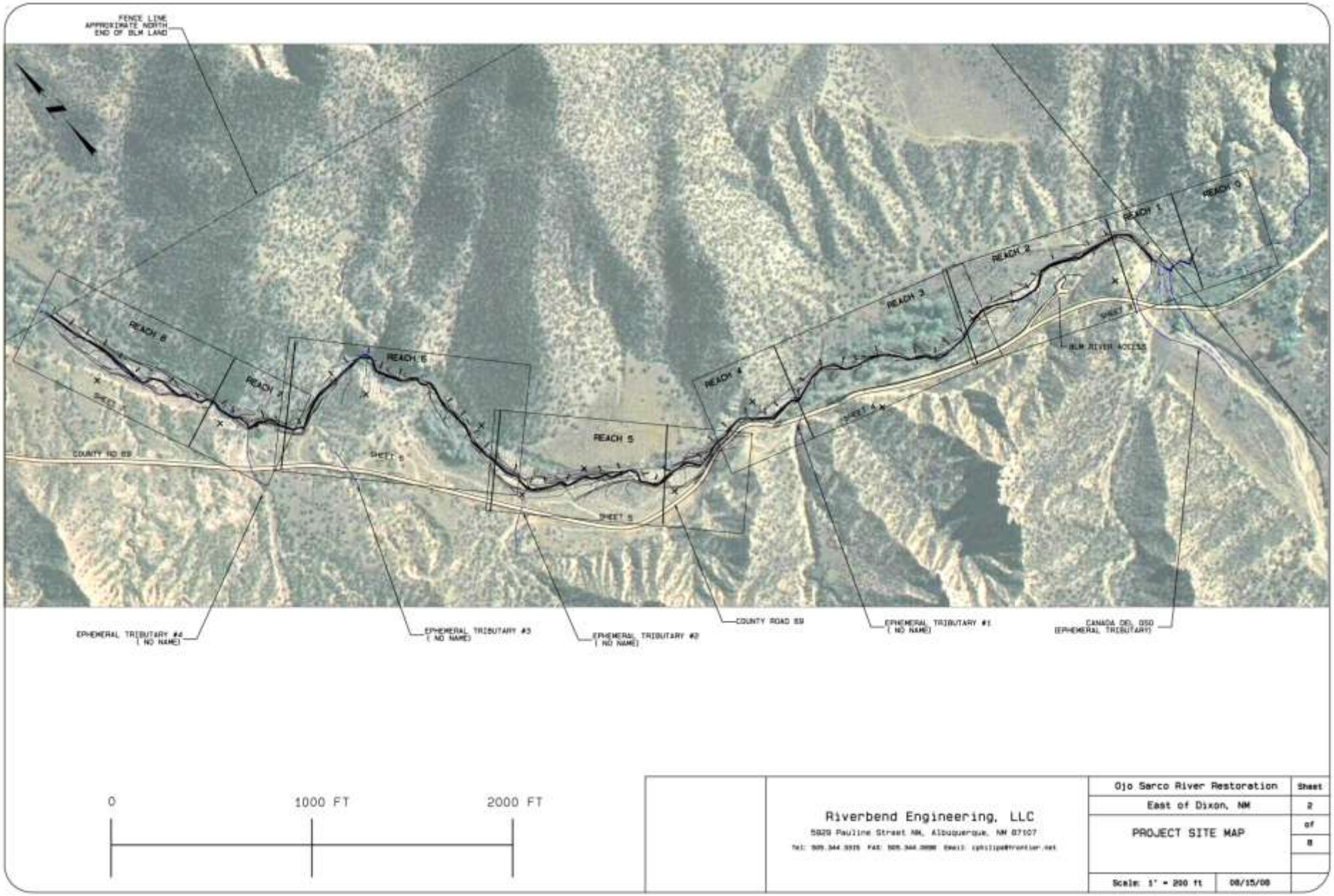
Riverbend Engineering, 2008. *Technical Assessment River Restoration Work on the Rio Ojo Sarco east of Dixon, NM.* Available at BLM Taos Field Office.

Map 1

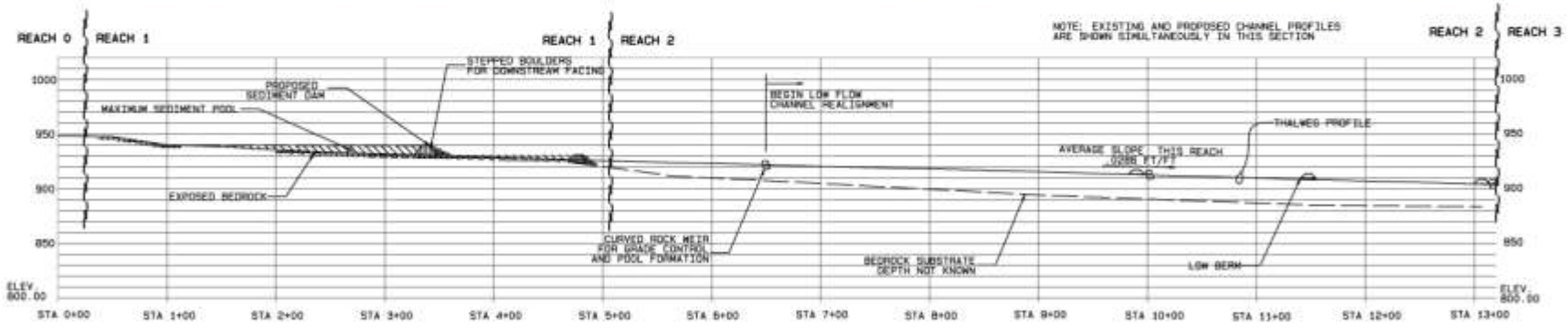


Project Location
Pilar
CANON
T 24 N
T 23 N
BOUNDARY
GRADE
RAILROAD
La Junta
La Bolsa
Rinconada
Dixon
Apodaca
Montecito
Cañocito
La Cejita
Vallecito
Chamisal
PICURIS
PUEBLO
Picuris Pueblo
Rio Lucio
La Sierrita
LLANO SANTA
BARBARA TRACT
10 E
R 11 E
R 12 E
Mesa de la Cejita

Appendix A: Project Design Sheets

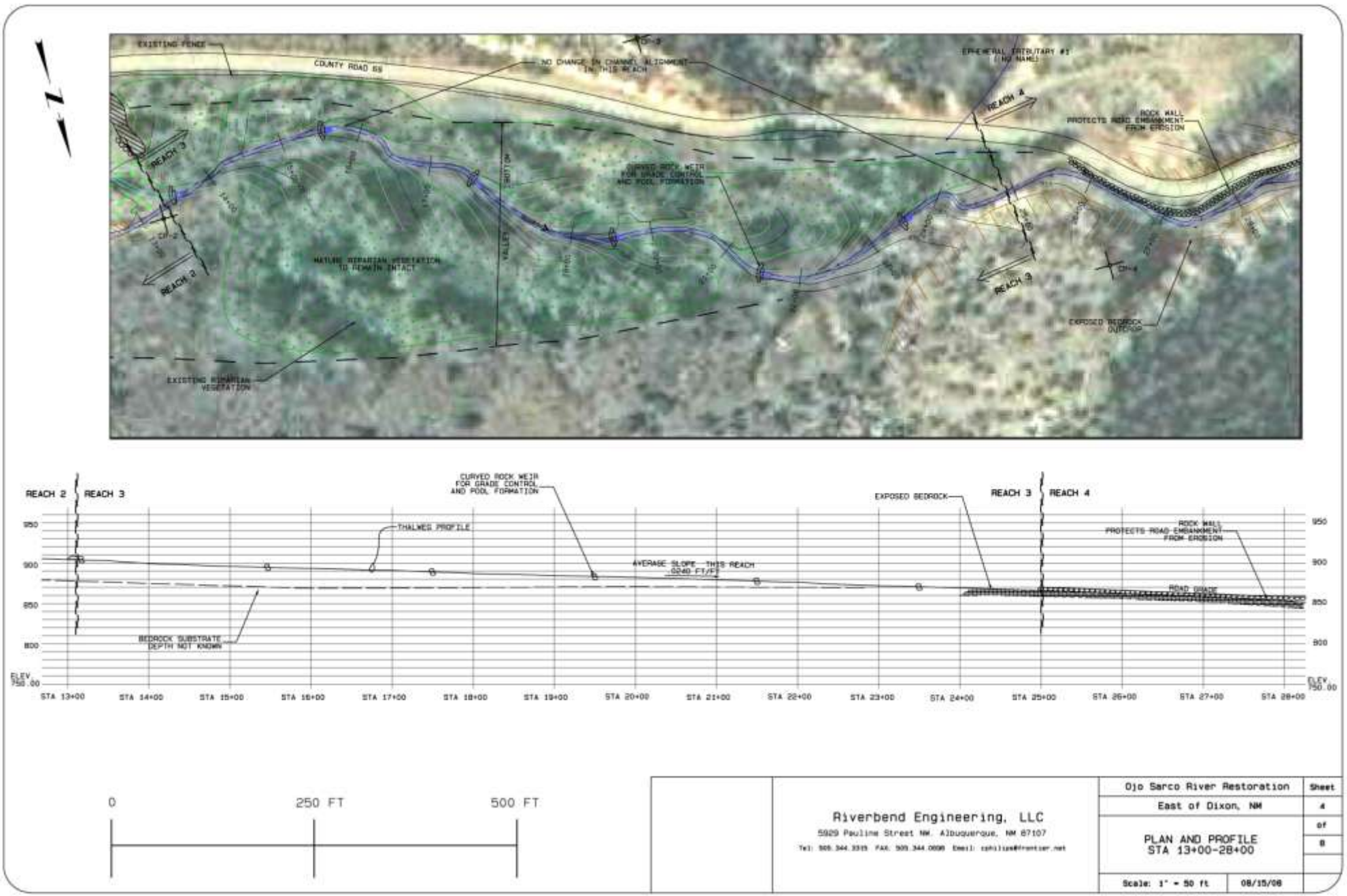


Project Site Map

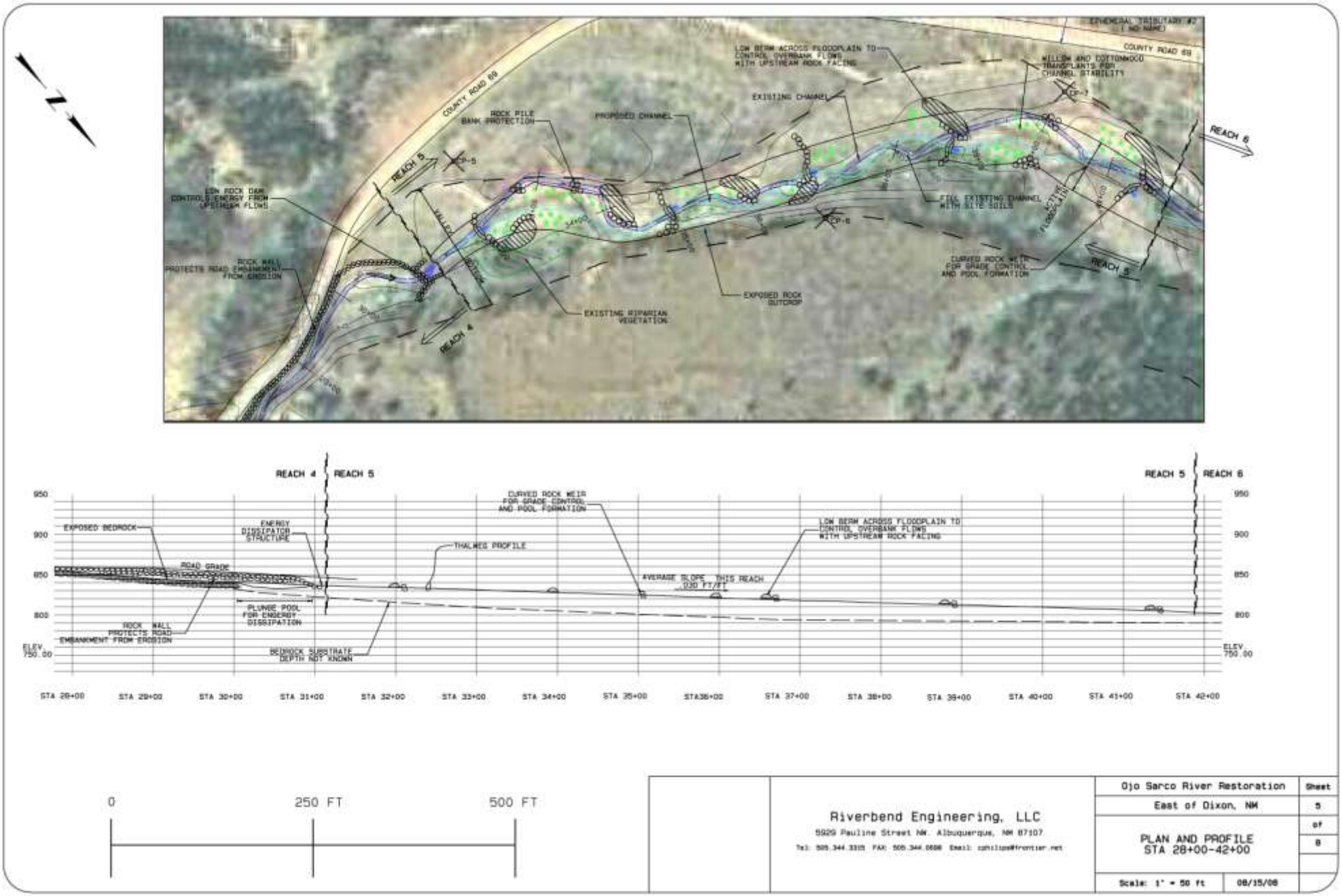


	Riverbend Engineering, LLC 5929 Pauline Street NW, Albuquerque, NM 87107 Tel: 505.344.3355 FAX: 505.344.0000 Email: cphillips@frontier.net	Ojo Sarco River Restoration	Sheet
		East of Dixon, NM	3
		PLAN AND PROFILE STA 0+00-13+00	of 8
		Scale: 1" = 50 ft / 08/15/08	

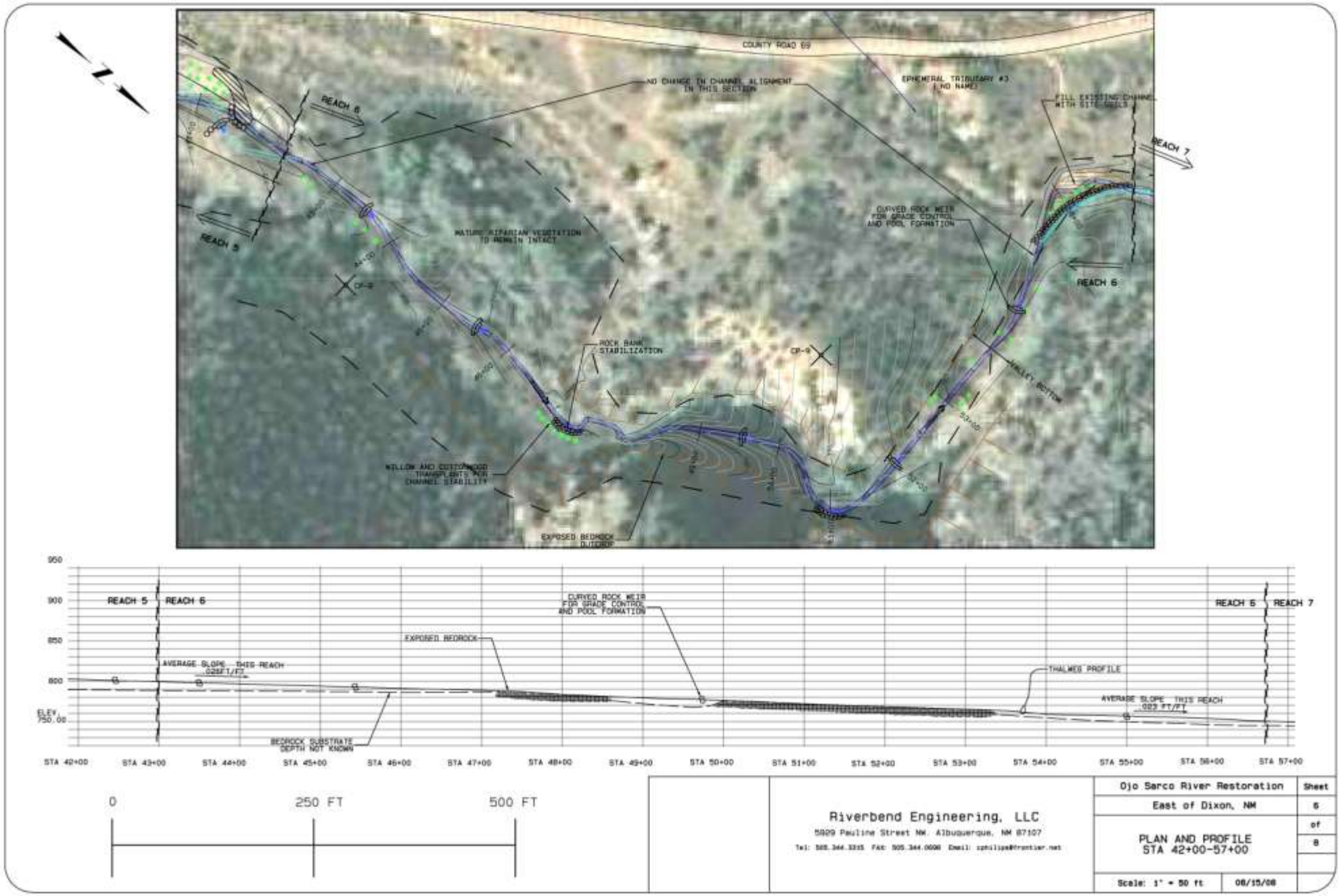
Proposed Design for Reaches 1-2



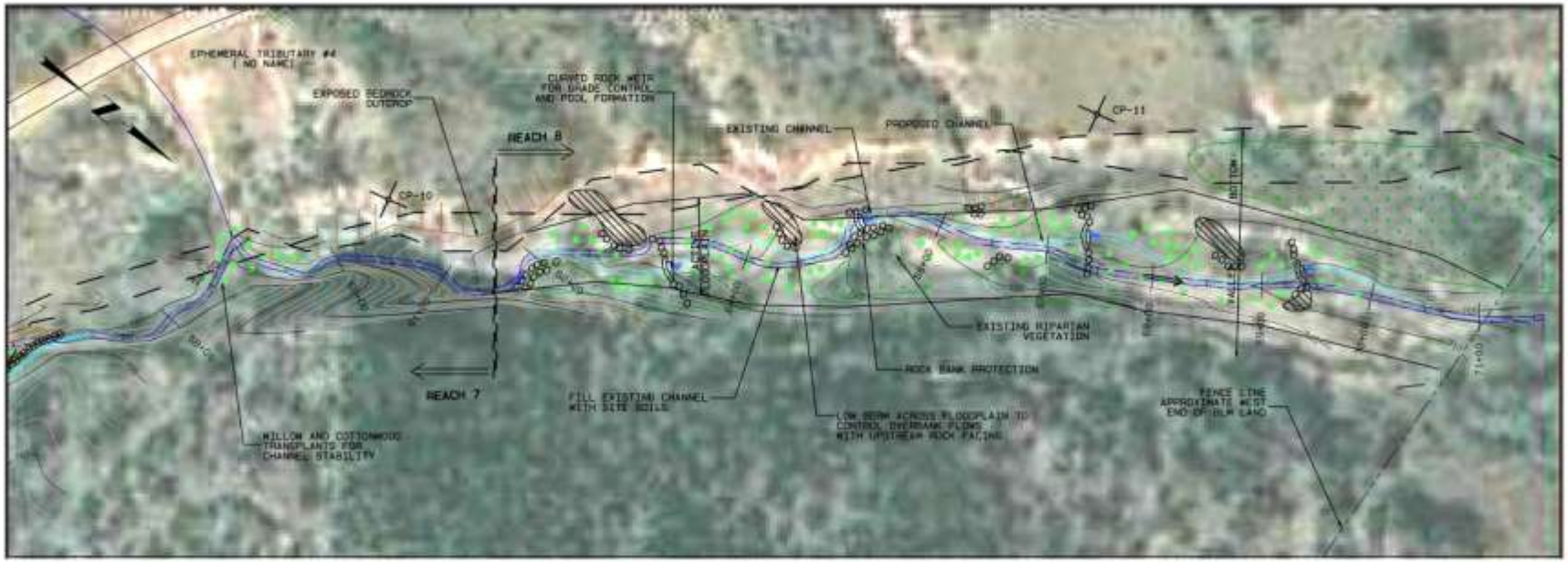
Proposed design for Reaches 2-4

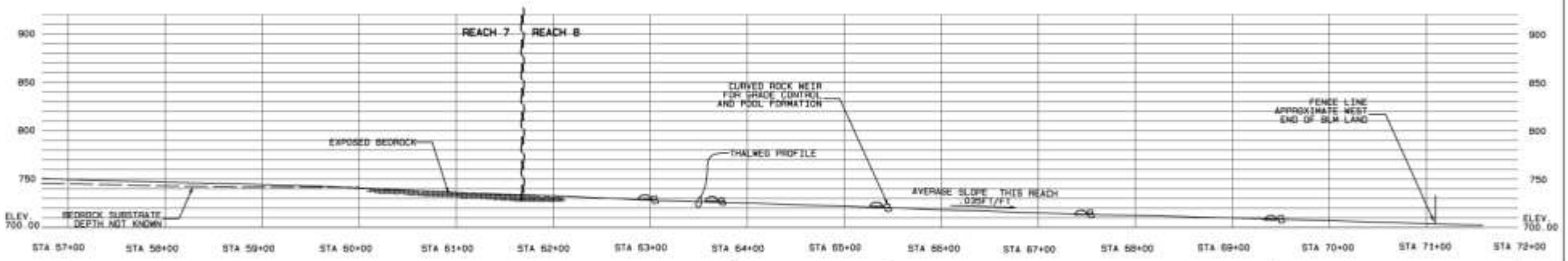


Proposed design for Reaches 4-6



Proposed Design for Reaches 5-7



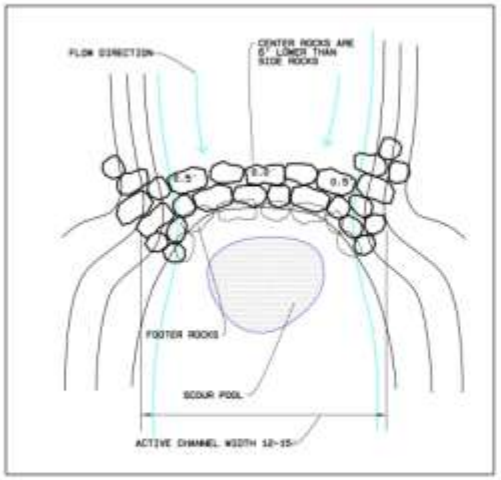


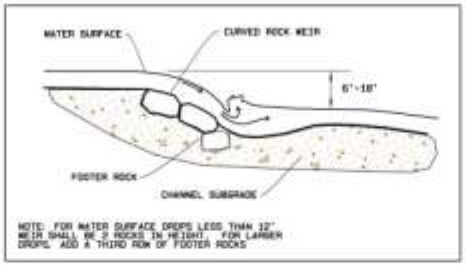
0 250 FT 500 FT

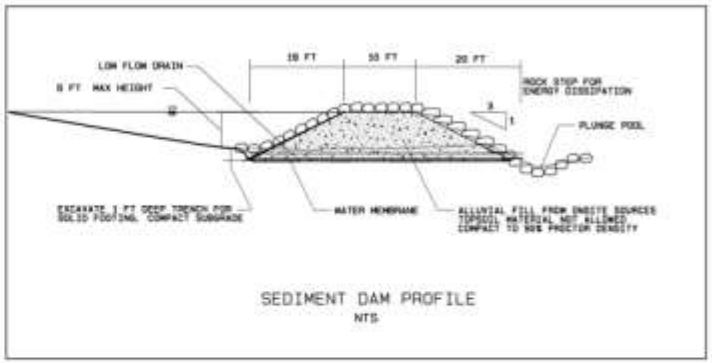
Riverbend Engineering, LLC
5929 Pauline Street NW. Albuquerque, NM 87107
Tel: 505.344.3315 Fax: 505.344.0888 Email: cphillips@frontier.net

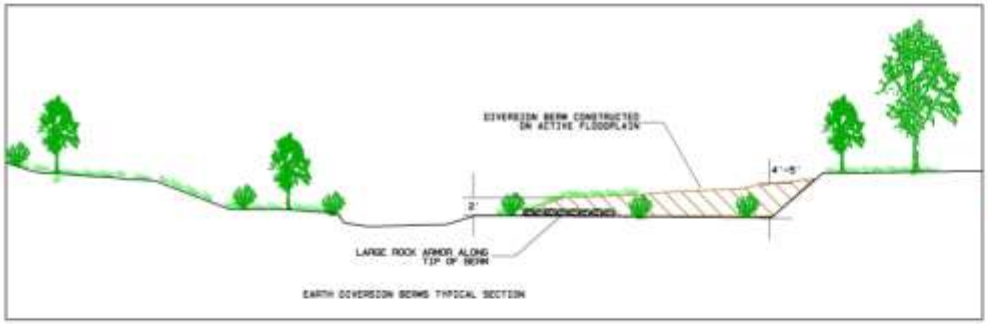
Ojo Sarco River Restoration	Sheet
East of Dixon, NM	7
PLAN AND PROFILE STA 57+00-72+00	of 8
Scale: 1" = 50 ft	08/15/08

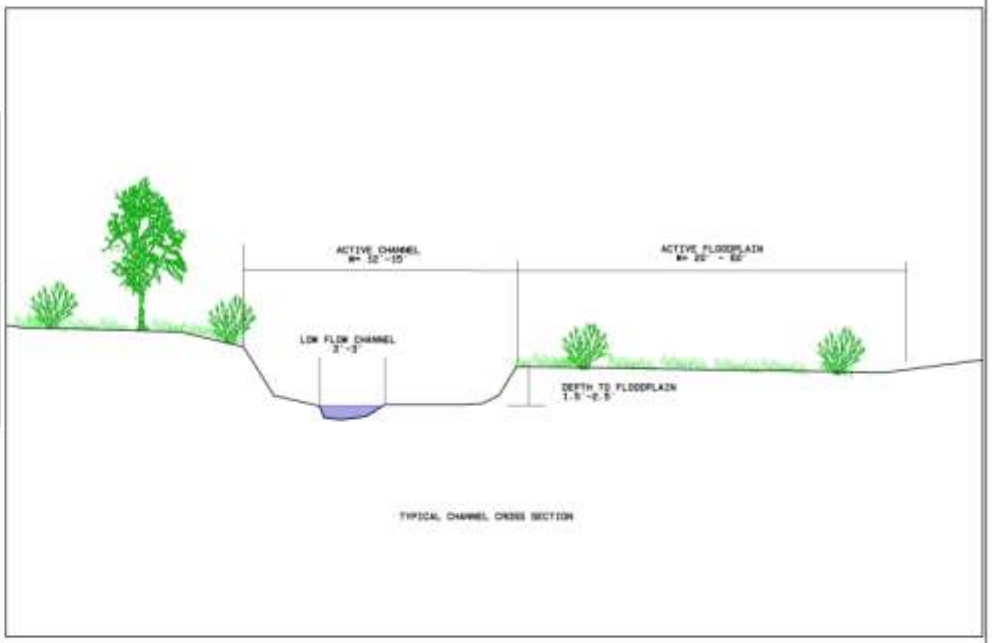
Proposed Design for Reaches 7-8











	Riverbend Engineering, LLC 5929 Pauline Street NW, Albuquerque, NM 87107 Tel: 505.344.3315 FAX: 505.344.0698 Email: cphillips@frontier.net	Ojo Sarco River Restoration	Sheet
		East of Dixon, NM	8
		DETAIL SHEET	of 8
		Scale: 1" = 50 ft / 08/15/08	

General structure and channel designs

Appendix B

Migratory Bird Species List for Ojo Sarco (Templeton 2007)

American crow

American kestrel

American robin

Ash-throated flycatcher

Band-tailed pigeon

Barn swallow

Bewick's wren

Black phoebe

Black-billed magpie

Black-capped chickadee

Black-chinned hummingbird

Black-headed grosbeak

Blue-gray gnatcatcher

Blue grosbeak

Brewer's sparrow

Broad-tailed hummingbird

Brown creeper

Brown-headed cowbird

Bullock's oriole

Bushtit

Canyon wren

Cassin's finch

Cassin's kingbird

Chipping sparrow

Cliff swallow

Common grackle

Common raven

Cooper's hawk

Downy woodpecker

European starling

Gray catbird

Gray flycatcher

Hairy woodpecker

House finch

Juniper titmouse

Ladder-backed woodpecker

Lazuli bunting

Lesser goldfinch

Mountain bluebird

Mountain chickadee

Mourning dove

Northern flicker

Northern rough-winged swallow

Orange-crowned warbler

Pine siskin

Pinyon jay

Plumbeous vireo

Red-naped sapsucker

Red-tailed hawk

Red-winged blackbird

Rock wren

Say's phoebe

Song sparrow

Spotted towee

Townsend's solitaire

Turkey vulture

Violet-green swallow

Virginia's warbler

Warbling vireo

Western bluebird

Western scrub-jay

Western tanager

Western wood-pewee

White-breasted nuthatch

White-throated swift

Willow flycatcher

Yellow-breasted chat

Yellow-rumped warbler

Yellow warbler

Bolded = Species of Management Concern